

**Forest Practices Road and Harvesting Rule Questions and Responses**  
**Prepared for the Mid-Coast IR TMDL Local Stakeholder Advisory Committee**  
Brad Knotts, Oregon Department of Forestry, June 25, 2012

**General Understanding of How the Road Rules Work**

Question 1a: Are all BMPs in the OARs?

*Answer:* The sediment-related road and harvesting BMPs are in the road OARs (OAR 629-625, 629-630, and 629-660). However, for the most part, the BMPs in the rules consist of qualitative directions for practices that will avoid or minimize the entry of sediment or other harvest or road generated materials into waters of the state. Some quantitative standards are provided in companion sources, including the Forest Practices Notes, Forest Practices Technical Notes, and ODF interpretive guidance for the road and harvesting rules (see Attachment 1). For example, a table describing suggested water bar spacing on roads and skid trails is provided in Forest Practices Note 1 Water Bars (see also Forest Practices Technical Note 8 Installation and Maintenance of Cross Drainage Systems on Forest Roads). The wet weather hauling rules themselves provide an observable standard for excess turbidity in Type F and D streams from wet season hauling, but it a visible change standard as opposed to a numeric standard. The stream rule in the road rules also provides an objective culvert-sizing standard of meeting the 50-year flood event.

Question 1b: How are changes in practices addressed in the rules over time? [What are the dates of the road rules?]

*Answer:* The Oregon Board of Forestry and the Oregon Department of Forestry conduct monitoring studies and review technical information periodically to determine if the harvesting rules are effective in meeting the objectives of the Oregon Forest Practices Act. If the board determines that there is sufficient information to indicate that current forest practices are degrading water quality or other forest resources, the board considers the adoption of rules or other measures that would address the problem. As an example, a series of reviews and monitoring projects undertaken between 1998 and 2003 indicated that improvement was needed in managing roads to reduce the amount of sediment entering streams. As a result the Board of Forestry considered and adopted the following rules in 2003:

- 629-625-0330 Drainage [The rule was reorganized to ensure that road drainage practices were applied in the proper priority, e.g., where there is a conflict, consider that keeping drainage water off of unstable slopes as a higher priority than ensuring that drainage water is not directed into streams.]
- 629-625-0600(9) Road Maintenance: Where needed to protect water quality, as directed by the State Forester, operators shall place additional cross drainage structures on existing active roads within their ownership prior to hauling to meet the requirements of OAR 629-625-0330 [Drainage].
- 629-625-0700 Wet Weather Road Use [The rule added a requirement for durable surfacing on forest roads and an explicit requirement to stop hauling if the activity was causing sediment to enter Type F or Type D streams.
- Forest Practices Technical Note 7 Avoiding Roads in Critical Locations [See Attachment 1. The note is not a rule; the Board of Forestry determined that the technical note would serve the purpose of clarifying forest practice road rules on road location.]

## Questions for the Mid-Coast

Question 2a: How do the road rules address road locations on high risk sites, e.g., high landslide hazard locations?

*Answer:* Road location is addressed in the road rules as follows:

OAR 629-625-0200 Road Location

- (1) The purpose of this rule is to ensure roads are located where potential impacts to waters of the state are minimized.
- (2) When locating roads, operators shall designate road locations which minimize the risk of materials entering waters of the state and minimize disturbance to channels, lakes, wetlands and floodplains.
- (3) Operators shall avoid locating roads on steep slopes, slide areas, high landslide hazard locations, and in wetlands, riparian management areas, channels or floodplains where viable alternatives exist.
- (4) Operators shall minimize the number of stream crossings.
- (5) To reduce the duplication of road systems and associated ground disturbance, operators shall make use of existing roads where practical. Where roads traverse land in another ownership and will adequately serve the operation, investigate options for using those roads before constructing new roads.

Section (1) describes the overall purpose of the rule. Section (2) elaborates by generally allowing roads only in locations that will minimize the risk of sediment or other materials entering waters of the state. Section (3) explicitly forbids roads on high landslide locations or other steep slopes, “where viable alternatives exist.” Board of Forestry and Oregon Department of Forestry process for evaluating alternatives is summarized in Forest Practices Technical Note 7 Avoiding Roads in Critical Locations as follows:

“When preliminary road locations cross any critical location [including high landslide hazard locations], evaluate alternative locations using different grades and alignments that will serve the intended road use. For the six most sensitive critical locations, use of very steep grades is often warranted. If steep grades or alternative alignments will not work, alternative logging techniques must be evaluated.” (page 9)

The intention is that there must be extensive analysis of available alternatives to roads on steep slopes, which might well consist of alternate routes or more expensive logging systems.

Question 2b: How do the road rules address sidecast road construction?

*Answer:* Balanced road construction is common on slopes that are not considered too steep (50%+, depending on location, soils, and local slope stability). “Balanced road construction” means having rough balance between the cutting into the native slope on the uphill side, and placing the excavated material to on the downhill side to form the road running surface and fill slope. When properly constructed and maintained, such roads provide a useful transportation network and minimize the entry of sediment into waters of the state. However, when underlying slopes are steep or unstable, or when roads may be near waters of the state, placement of fill material may not be appropriate. The following rules address this situation:

#### OAR 629-625-0300 Road Design

(2) Operators shall design and construct roads to limit the alteration of natural slopes and drainage patterns to that which will safely accommodate the anticipated use of the road and will also protect waters of the state.

#### OAR 629-625-0310 Road Prism

(1) Operators shall use variable grades and alignments to avoid less suitable terrain so that the road prism is the least disturbing to protected resources, avoids steep sidehill areas, wet areas and potentially unstable areas as safe, effective vehicle use requirements allow.

(2) Operators shall end-haul excess material from steep slopes or high landslide hazard locations where needed to prevent landslides.

(3) Operators shall design roads no wider than necessary to accommodate the anticipated use.

(4) Operators shall design cut and fill slopes to minimize the risk of landslides.

(5) Operators shall stabilize road fills as needed to prevent fill failure and subsequent damage to waters of the state using compaction, buttressing, subsurface drainage, rock facing or other effective means.

\*\*ODF interpretive guidance for this section 2 of this rule describes "steep slopes" as:

"...slopes over 60 percent, 40 percent in decomposed granite-type materials and other highly erodible materials, (*Reference 629-630-0150(2) & (3)*) where there is a risk of materials entering waters of the state, other slopes where sidecast is likely to fail sometime in the future, and seep and spring areas with slopes over 50 percent."

High landslide hazard locations" are defined as follows:

OAR 629-600-0100 (30) "High landslide hazard location" means a specific site that is subject to initiation of a shallow, rapidly moving landslide.; and

#### OAR 629-623-0100

(3) The following criteria shall be used to identify high landslide hazard locations:

(a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of any headwall or draw in western Oregon steeper than 70 percent, except in the Tyee Core Area, where it is any headwall or draw steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state where the hazard is equivalent to (a) or (b) above. The final determination of equivalent hazard shall be made by the State Forester.

\*\*Note that although OAR 629-623-0100 addresses landslides and public safety, the high landslide hazard criteria are used for protection of water quality even when no public safety risk is identified under OAR 629-623.

#### OAR 629-625-0340 Waste Disposal Areas

Operators shall select stable areas for the disposal of end-haul materials, and shall prevent overloading areas which may become unstable from additional material loading.

#### OAR 629-625-0410 Disposal of Waste Materials

Operators shall not place debris, sidecast, waste, and other excess materials associated with road construction in locations where these materials may enter waters of the state during or after construction.

**\*\*This is a key rule addresses the placement of sidecast material from road construction.**

#### OAR 629-625-0440 Stabilization

(1) Operators shall stabilize exposed material [including fill or sidecast material] which is potentially unstable or erodible by use of seeding, mulching, riprapping, leaving light slashing, pull-back, or other effective means.

#### Question 2c: What are the road drainage specifications, e.g., cross drains, drainage at road crossings?

*Answer:* Cross drains should be placed as close to stream crossings as is practical and effective as needed to drain water away from streams. Precisely where the cross drains should be placed varies with the local conditions and topography. The basic standard is specified in rule as follows:

#### OAR 629-625-0330 Drainage

(4) Operators shall install dips, water bars, or cross drainage culverts above and away from stream crossings so that road drainage water may be filtered before entering waters of the state.

Forest Practices Technical Note 8 Installation and Maintenance of Cross Drainage Systems on Forest Roads provides a table specifying distances away from streams for placement of cross drains, as follows:

**Table 1. Suggested distances for filtering**

Road grade	Distance to next cross-drain up road		
	under 300 feet	300-600 feet	over 600 feet
0 to 5 %	15 ft	30 ft	50 ft
6 to 12 %	30 ft	60 ft	100 ft
13 to 19 %	50 ft	100 ft	150 ft
over 20 %	60 ft	120 ft	200 ft

Cross drains should be 50 to 200 feet from the stream crossing, as measured along the road (Figure 4). For effective filtering, soils must not have been disturbed by logging

#### Harvest Units

#### Question 2d-1: How do the harvesting rules address sediment from harvest units?

*Answer:* The sediment-related road and harvesting BMPs are in the road OARs (OAR 629-625, 629-630, and 629-660). However, for the most part, the BMPs in the rules consist of qualitative directions for practices that will avoid or minimize the entry of sediment or other harvest or road generated materials into waters of the state. Some quantitative standards are provided in companion sources, including the Forest Practices Notes, Forest Practices Technical Notes, and ODF interpretive guidance for the road and harvesting rules (see Attachment 1). For example, a table describing suggested water bar spacing on roads and skid trails is provided in Forest Practices Note 1 Water Bars (see also Forest Practices Technical Note 8 Installation and Maintenance of Cross Drainage Systems on Forest Roads).

Question 2d-2: How do the rules address sediment into unbuffered non-fish streams?

*Answer:* One primary objective of the harvesting rules is to avoid and minimize the entry of harvest-generated sediment into waters of the state. That objective applies to Type F and Type D streams; the standard is not relaxed for small Type N streams, which often have no specified vegetation retention buffer (there are more restrictions on harvesting activities near Type F or Type D streams, but the expected outcome is the same).

The harvesting rules focus on proper location, maintenance, and drainage of skid trails and landings to minimize the entry of sediment into waters of the state. The rules prohibit excavated skid trails on high landslide hazard locations and limit the use of ground-based yarding equipment on other steep or erosion-prone slopes. Because nearly every rule in the harvesting rules describes a practice needed to minimize the entry of harvest-generated sediment into water of the state, the rules are not reproduced here.

**Links to current BMPs**

Question 2e-1: What are the road standards in stewardship plans?

*Answer:* OAR 629-621-0100 Purpose [of the stewardship agreement rules] introduces the concept of forest landowners exceeding “regulatory criteria for conservation, restoration, and improvement of fish and wildlife habitat or water quality while managing land to meet their objectives.”

Road and harvesting sediment related criteria for evaluating management plans that are part of stewardship agreements are outlined in OARs as follows:

OAR 629-021-0500 Criteria to Evaluate Adequacy of a Landowner Management Plan To Meet Purpose of Rules

- (1) The management plan will include provisions to protect or conserve fish and wildlife habitat, water resources, and soil resources appropriate to the property and consistent with landowner objectives.
- (2) The management plan will be reviewed against the following criteria (a-c) to determine whether the landowner is implementing management actions that exceed regulatory requirements for the conservation, restoration, and improvement of fish and wildlife habitat or water quality.
  - (a) Management actions to conserve, restore, and improve fish and wildlife habitat:
    - (I) Natural hydrology is restored to provide habitat for native fish and other aquatic species.
    - (K) Road disturbances to fish and wildlife habitat are minimized.
    - (L) Fish passage limitations are addressed.
  - (b) Management actions to conserve, restore and improve water resources:
    - (A) Riparian vegetation is protected, managed, or restored to provide erosion control, sediment and nutrient filtering, and other functions of a properly functioning riparian area.
    - (B) Sediment runoff and animal wastes are controlled at the source to prevent ground and/or surface water contamination.
    - (C) Vegetation and soils are managed to conserve water by encouraging infiltration and storage of rainfall in the soil.
    - (D) Irrigation and drainage systems are managed to prevent waste of water and to protect water quality.
    - (E) Road systems are managed to reduce or eliminate sediment delivery to streams and to prevent catastrophic failure.
  - (c) Management actions to conserve, restore, and improve soil resources:
    - (D) Soil disturbance and compaction during timber harvest is minimized.

(F) Land management on steep slopes and fragile soils is conducted in a manner to reduce or eliminate impacts to the site.

OAR 629-021-0600 Stewardship Agreement

(1) The agreement will include the landowner's commitment to:

(a) Implement the activities and monitoring identified in this agreement for enhancing conservation, restoration, and improvement of fish and wildlife habitat or water quality.

(b) Comply with and manage beyond relevant habitat and water quality rules and statutes.

(c) Allow audits and assist with the process, as appropriate.

Question 2e-2: What documents are used for education, e.g., illustrated manual, forest roads manual, etc.?

*Answer:* See Attachment 1.

## **Attachment 1: Documents Used for Education and Outreach related to Forest Roads and Harvesting**

### **Source: Oregon Department of Forestry—documents assist in understanding and applying the forest practice rules**

Forest Practices Note 1 Water Bars (includes spacing guide)

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/Waterbars.pdf>

\*Original, hard copy version is formatted and contains illustrations. Online version reproduced as text-only pending full update of the note.

Forest Practices Note 4 Road Maintenance

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/RoadMaintenance.pdf>

\*Original, hard copy version is formatted and contains illustrations. Online version reproduced as text-only pending full update of the note.

Forest Practices Note 5 Ground Based Harvesting

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/GroundBasedHarvesting.pdf>

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Forest Practices Technical Note 3 Replacing Stream Crossing Structures Outside Normal In-Water Working Periods

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/ReplacingStreamCrossingStructures.pdf>

Forest Practices Technical Note 5 Determining the 50-Year Peak Flow and Stream Crossing Structure Size for New and Replacement Crossings

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/Determining50YrPeakFlowCrossingSize.pdf>

Forest Practices Technical Note 7 Avoiding Roads in Critical Locations

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/AvoidingRoadsInCriticalLocations.pdf>

Forest Practices Technical Note 8 Installation and Maintenance of Cross Drainage Systems on Forest Roads

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/InstallationCrossDrainageSystems.pdf>

Forest Practices Technical Note 9 Wet Weather Road Use

<http://odfnet.odf.state.or.us/PF/ReferenceLibrary/WetWeatherRoadUse.pdf>

ODF Interpretive Guidance for the Forest Practice Harvesting Rules (OAR 629-625)—intended primarily for use by ODF staff, but available publicly

<http://egov.oregon.gov/ODF/privateforests/docs/guidance/OARDiv625.pdf>

ODF Interpretive Guidance for the Forest Practice Road Rules (OAR 629-630)—intended primarily for use by ODF staff, but available publicly

<http://egov.oregon.gov/ODF/privateforests/docs/guidance/OARDiv630.pdf>

Manual: Water Bar Systems

Low-cost, hard-copy only, pictorial guide with images of effective and ineffective cross-drainage water bars on roads.

**Source: Oregon Forest Resources Institute**

Oregon's Forest Protection Laws—a detailed, reader friendly review of the Oregon Forest Practices Act and forest practice rules

[http://oregonforests.org/sites/default/files/publications/pdf/OR\\_Forest\\_Protection\\_Laws\\_2011.pdf](http://oregonforests.org/sites/default/files/publications/pdf/OR_Forest_Protection_Laws_2011.pdf)

**Source: Oregon State University Extension Service— documents assist forest landowners in forest management, including understanding and applying the Oregon Forest Practices Act and forest practice rules**

EC 1137 Designing Forest Roads

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/20520/ec1137.pdf>

EC 1139 Maintaining Woodland Roads

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/13958/ec1139.pdf?sequence=1>

EC 1109 Soil Compaction on Woodland Properties

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/13878/ec1109.pdf?sequence=1>

Managing Woodland Roads: A Field Manager's Guide

(Originally produced in hard copy only. Distributed to forest landowners. Now out of print.)

**Source: Oregon State University Forest Research Laboratory**

Research Contribution 5 Forest Road Contracting, Construction, and Maintenance for Small Woodland Owners-- document assists forest landowners in forest management, including understanding and applying the Oregon Forest Practices Act and forest practice rules

<http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/7872/RC35.pdf?sequence=1>